Camp Lick Project

Economics Report

Prepared by:
Krystal Cates
PreSale Lead

for:

Blue Mountain Ranger District
Malheur National Forest

August 1, 2017

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Introduction

Although individuals and communities over a wide geographic area use national forest resources, the residents and businesses of counties near the forest depend most heavily on the availability of resources. Consequently, the effects of forest management on social and economic factors are strongest within these areas. For this reason, the Malheur National Forest primary zone of influence for economic impact is defined as Grant and Harney counties in Oregon.

Regulatory Framework

The Malheur Forest Plan includes forest-wide management goals to:

- Provide a sustained flow of timber for lumber, fiber, and/or associated wood products at a level that will contribute to economic stability, while providing for regional and national forest management.
- Contribute to the social/economic health of communities, which are significantly affected by national forest management.
- Provide an economic return to the public.
- Provide and utilize wood fiber in the form of sawtimber, fiber, and/or associated wood products, while minimizing losses and maximizing outputs in a cost-effective manner, consistent with the various resource objectives and environmental standards.

The Code of Federal Regulations (CFR) is a codification of the general and permanent rules published in the Federal Register by the Executive departments and agencies of the Federal Government. Minimum specific management requirements to accomplish goals and objectives for the National Forest System are identified in 36 CFR 219.27 and include:

- Section B Vegetative Manipulation: (1) Multiple-use; (3) Not chosen for greatest dollar return; (7) Practical transportation, harvest requirements, and preparation and administration.
- Forest Service policy sets a minimum level of financial analysis for project planning (FSH 1909.17).
- The National Environmental Policy Act (NEPA) requires integrated use of the natural and social sciences in all planning and decision-making that affects the human environment. The human environment includes the natural and physical environment, and the relationship of people to the environment (40 CFR 1508.14).
- Title 40, Code of Federal Regulations for NEPA (40 CFR 1502.23) addresses non-commodity values, stating “For the purposes of complying with the Act, the weighing of the merits and drawbacks of the various alternatives need not be displayed in a monetary cost-benefit analysis, and should not be, when there are qualitative considerations.”
- 36 CFR 219.3 – National Forest System Land and Management Planning.
- Executive Order 12898 (February 11, 1994) on Environmental Justice directs federal agencies to identify and address agency programs that may have a disproportionately high and adverse environmental effect on minority populations, low-income populations, or Indian tribes. The order directs federal agencies to focus attention on the human health and environment effects to ethnic minorities (American Indians, Hispanics, African Americans, and Asian and Pacific-Islander Americans), disabled people, and low-income groups.

Resource Elements, Indicators, and Measures

The measurement indicators detailed in Table 1, and described above, are used for assessing the economic effects of the Camp Lick Project.

Table 1. Resource indicators and measures for assessing effects

Resource element	Resource indicator	Measure	Source
Viability of harvest	Commercial harvest acreage and volume estimates; assumed costs of commercial sale	Acreage and volume of commercial harvest; cost	Forest Service Handbook 2409.18
Employment and income	Direct and indirect employment; direct, indirect, and induced income	Number of jobs; income	Malheur Forest Plan (USDA Forest Service 1990, Goals 26 and 42, page IV-3)
Economic efficiency	Present net value	Dollars ($)	Malheur Forest Plan (USDA Forest Service 1990, Goals 26 and 42, page IV-3)

Affected Environment

Existing Condition

Viability of Harvest

The viability of harvest is dependent upon market prices for raw wood fiber and the costs of harvest that are identified in the methodology section below. Market prices are determined by the supply and demand relationships that exist for wood fiber on a global scale. Local sawmills that could bid on sawtimber from this project are located in Prairie City and John Day. In addition, three to four large logging contractors usually bid on local timber sales, and if successful, could sell the sawtimber to the local sawmills. Mills outside Grant and Harney counties that may benefit from the timber on this project include La Grande and Pilot Rock. This could have an impact on the economies of these communities as well.

Currently, the Malheur National Forest is in the fourth year of the 10-year stewardship contract. The stewardship contract was designed to help keep jobs and forest products in our local economy. Approximately 70 percent of the Malheur National Forest's fiscal year harvest volume target is to be included in the stewardship contract, and the remaining 30 percent is to be included in regular timber sale contracts. This ensures that forest products and the associated jobs will not only be available to local economy, but will also be available to potential outside bidders or mills that may be interested. The Camp Lick Project could be included in a stewardship contract or regular timber sale contract.

Employment and Income

Job estimates are based on the assumption of a direct relationship between changes in harvest volumes and manufactured output. In other words, a percentage change in harvest volume would result in a corresponding change in manufactured output and employment. Job estimates include temporary, permanent full time, and part-time employment. Employment effects from recreation and domestic-livestock grazing activities are not analyzed because only minor or no changes were expected in the level of use for these activities. The estimates provided by this analysis also do

not include unpaid family workers or sole proprietors. Estimates apply to communities and counties in the regional economic impact zone and not necessarily to any one county.

Levels of harvest volume by alternative would affect employment and income in several ways:

- Directly – employment associated with harvesting, logging, mills, and processing plants for sawtimber, pulp, chips, veneer and plywood
- Indirectly – industries that supply materials, equipment, and services to these businesses
- Induced – personal spending by the business owners, employees, and related industries

Several factors would influence the ability of any one county or community to experience the largest extent of the harvest-related employment and income effects. The financial viability of the timber sale proposals would influence whether potential purchasers closest to the planning area could compete with other purchasers to acquire the majority of the supply. Changes to bid rates would likely occur during appraisal, depending on actual market conditions at that time. Employment projections would depend on other factors such as market conditions, quality and quantity of the volume offered for sale, timing of the offerings, and financial conditions of local firms.

Agriculture, manufacturing (particularly wood products), and food processing are important sources of employment and income in this region. Reliance on timber and forage from federal lands is moderate to high in several counties in the zone of influence (Haynes and Horne 1997). Many communities in the economic impact zone are closely tied to the forest in both work activities and recreation. Cattle production and forest products provide the core employment for Grant and Harney counties. The forest products industry includes two major lumber mills and several logging companies.

The area surrounding the planning area is rural and has a disproportionately high unemployment rate compared with the Oregon state average and the National average. Currently (as of December 2016), Grant County is at 7.2 percent unemployment compared to the Oregon state average of 4.6 percent, and the National average of 4.7 percent (Oregon Employment Department 2016).

Environmental Justice

The population of the area is predominately white, followed by American Indian. The region is sparsely populated and contains low populations of other minority groups (1.5 percent of Grant County, 2.8 percent of Baker County, and 6.5 percent of Harney County) (Headwaters Economics 2017). The primary American Indian tribes represented are the Burns Paiute Tribe, the Confederated Tribes of the Umatilla Reservation, and the Confederated Tribes of the Warm Springs. With the exception of the Burns Paiute Tribe, other minority groups are scattered throughout the three counties.

Data regarding minorities or people with disabilities employed in the region's timber, mining, ranching, road construction, forestry services, and recreation sectors is unavailable. Some federal contracts are reserved for award to minority businesses under the USDA Office of Small and Disadvantaged Business Utilization and the Small Business Administration.

Economic Efficiency

Economic efficiency is a term used to describe how inputs are used to achieve outputs when all inputs (activities) and all outputs (including market and non-market) are identified and valued. All

costs and all benefits to society are included; amounts of each output are not pre-established but are produced in amounts that maximize net public benefits (FSH 1909.17, §11.1).

Therefore, the economic efficiency of this project was measured by cost effectiveness, as recommended by FSH 1909.17. Cost effectiveness analyses attempt to determine the least costly alternative to produce the desired result. The objective of the cost effectiveness analysis was to show a relative measure of difference between alternatives. Where harvest viability was analyzed for only the commercial units, cost effectiveness was analyzed for all units together. The analysis focused on identifiable and quantifiable ecosystem benefits and costs for each alternative in terms of the present net value to assess which alternative came nearest to achieving the purpose and need over the largest land area at the least cost. All dollar values were discounted in terms of the present net value (2015 dollars). The real (exclusive of inflation) discount rate used was 4 percent.

The measurement of economic efficiency differs from the measurement of harvest viability in that economic efficiency attempts to put values on the full range of inputs and outputs (both market and non-market) associated with the project, while harvest viability is more like an accounting procedure that only considers the costs and revenues of the project as expressed in timber markets.

Volumes, costs, and revenues from the commercial units were analyzed for cost effectiveness. The derivation of the commercial unit data is described in the harvest viability section of this report.

Desired Condition

The desired condition is to maintain the existing lumber and forest products infrastructure and support local employment, providing for community stability. The Malheur Forest Plan includes direction to provide a sustainable flow of timber and associated wood products at a level that would contribute to economic stability and provide an economic return to the public (USDA Forest Service 1990, Forest Goals 24–26, page IV–2). Implementation of the Camp Lick Project would provide a variety of commercial wood products, including sawlogs, biomass, and post and pole.

The desired condition is also to "Contribute to the social and economic health of communities which are significantly affected by National Forest management" (USDA Forest Service 1990, Forest Goal 42, page IV–3). Implementation of the Camp Lick Project would provide local employment opportunities through vegetation, fuels, and aquatic restoration activities.

Environmental Consequences

Methodology

The social and economic effects of the proposed management alternative were assessed in terms of viability of harvestable timber, employment supported, and income provided.

The computer program, TEA_ECON was used to estimate the sale revenues based upon the estimated tentative advertised bid rates per hundred cubic feet ($/ccf) for the commercial acres of the alternative 2. These bid rates indicated the economic viability of harvesting timber. The estimates of these bid rates were based on the most current estimates of the following:

- Estimated volume per acre — estimated from local knowledge of stands. All volume is in hundreds of cubic feet (ccf). An average commercial unit volume was estimated at 6.5 ccf per acre.
- Species Composition — estimated at 70 percent ponderosa pine and 30 percent Douglas-fir and other species for the sale as a whole.
- Estimated volumes of sawtimber are shown in Table 3.

TEA_ECON is an economic analysis tool that allows the user to perform timber sale accounting at the planning or sale layout level. The program uses price and cost data and the quarterly updated regional record of timber sale transactions to generate gross timber values, estimated advertised rates, and cash flow estimates.

In this project, cost effectiveness was measured in terms of present net value (PNV) per acre or: PNV/acre equals present net costs/acre minus present net revenues/acre.

Measurable costs and benefits on commercial units were based on costs and revenue from timber volume proposed for harvest and described under the assumptions for harvest viability.

Preliminary Value of Timber Removed: Based on a weighted average for all sales actually sold within Appraisal Zone 3 (primarily Blue Mountain forests) within the last 12 months.

Costs: Logging systems, log haul, road maintenance, contractual, brush disposal, erosion control, and other development. These costs are shown in Table 3 and are discounted to present net values at a rate of 4 percent.

An initial tentative advertised sawtimber bid rate ($/ccf) was determined by subtracting the costs associated with logging from the base period prices adjusted for the quality of the material and current market conditions. This rate was reduced by 10 percent per current appraisal methods.

The transaction evidence appraisal method accounts for competition between bidders. It is important to note that advertised bid rates have fluctuated over the last few years reflecting the volatility of the timber market. Prices would likely change in the future (e.g., when the actual sale appraisal occurs), depending on market conditions at that time. Therefore, these estimates should only be considered rough approximations of future conditions. As a result, calculated bid rates were rounded to the nearest dollar. Timber sale revenues were also discounted to present values at a rate of 4 percent.

Base Period Price: The volume-weighted average bid price of competitively sold timber sales in the previous 4 quarters. This value is updated quarterly.

Spatial and Temporal Context for Effects Analysis

The Malheur National Forest primary zone of influence for economic impact is defined as Grant and Harney counties in Oregon.

Although individuals and communities over a wide geographic area use national forest resources, the residents and businesses of counties near the Forest depend most heavily on the availability of the resources. Consequently, the effects of forest management on economic factors are strongest within these areas. For this reason, the Malheur National Forest primary zone of influence for economic impact is defined as Grant and Harney counties in Oregon.

Past, Present, and Foreseeable Activities Relevant to Cumulative Effects Analysis

There are several ongoing and foreseeable projects in the two counties in various stages of planning that potentially may add to the Forest's annual timber offerings for 2017 and beyond. The Wolf and Dove Project on the Emigrant Creek Ranger District, the Elk 16 Project on the Prairie City Ranger District, and the Big Mosquito, Starr Aspen, and Magone projects on the Blue Mountain Ranger District were signed within the past few years and could have timber products offered. The Flat Project on the Emigrant Creek Ranger District, and the Summit Project on the Prairie City Ranger District are currently under analysis and could produce a commercial product; see Table 2 for an estimate of the commercial acres and potential volumes produced by these projects. The amount of volume estimated per acre within each of these projects was based on the average estimate for the Camp Lick planning area, which is 6.5 ccf per acre. Many factors determine the amount of acres and volume to be removed including: silvicultural prescriptions, logging systems, and average diameter of trees being removed. The ranges of acreages and volumes shown in Table 2 reflect the different alternatives that maybe chosen, resulting in a range of the amount of product potentially produced.

Other upcoming projects include the Ragged Ruby Project on Blue Mountain Ranger District and the Cliff/Knox Project on Prairie City Ranger District; however, these projects are not far enough along in the planning process to have any acre or volume estimates. Areas within these projects maybe included into the 10-year stewardship contract or be offered as regular timber sales on the Malheur National Forest. These ongoing and foreseeable projects are expected to cumulatively add to the employment and income of Grant and Harney counties during the life of the Camp Lick Project.

Table 2. Ongoing and foreseeable projects contributing to the Malheur National Forest's annual timber offerings in 2017 and beyond

Project	Ranger District	Decision	Estimated commercial acres based on decision or alternatives analyzed	Estimated volume (ccf) based on decision or alternatives analyzed
Elk 16	Prairie City	2015	11,692	76,792
Big Mosquito	Blue Mountain	2015	8,600	56,484
Starr Aspen	Blue Mountain	2016	740	1,260
Dove	Emigrant Creek	2017	4,070	24,420
Magone	Blue Mountain	2017	7,165	42,810
Summit	Prairie City	Planned for 2017	14,249*	92,618
Flat	Emigrant Creek	Planned for 2018	6,400*	41,600

*Estimate based on Draft Record of Decision, alternative analyzed

Alternative 1 – No Action

Direct and Indirect Effects

Viability of Harvest

The no action alternative would not harvest timber, and therefore would not affect harvest viability.

Employment and Income

This alternative would not harvest timber and therefore, would not support direct, indirect, and induced employment, or increased income to local economies. Lack of timber supply available for the local mills to purchase would adversely affect employment in local communities in Grant and Harney counties (e.g., Burns, Long Creek, Canyon City, John Day, Mt Vernon, and Prairie City). Lack of timber supply available for purchase by regional mills from outside the economic impact area would potentially affect employment in surrounding counties (e.g., Baker, Ochoco, Union, and Umatilla).

Recent trends of increasing timber harvest from National Forest lands in the area would likely continue in the future and contribute to increases in wood products industry employment. Changes in the economic base and wood products infrastructure for the economic impact zone would continue to be influenced by fluctuations in market prices, international market conditions, changes in technology, and industry restructuring.

Economic Efficiency

With the no action alternative, the public would incur no costs, nor realize any benefits of timber harvest in this area. No action would yield a present net value of 0 due to the data limitations (described in the Methodology section) for quantifying economic benefits and costs beyond those identified at the project level. This value ignores the increased risks to forest health, vigor, and fire resistance that would result without implementation of this project, and the resulting losses in timber values and non-market benefits. Data limitations do not allow for the quantification of this risk; however, this risk would negatively affect present net value. Ongoing costs associated with management of the area, including the continuation of economic losses in forest stand values from recurring forest health problems, would continue.

Cumulative Effects

Because of the competitiveness of the market, and its global nature, the no action alternative would not cumulatively affect prices, costs, or harvest viability of other present or future timber sales in the economic impact zone, unless there was no other timber offered on the Malheur National Forest.

The selection of the no action alternative would not contribute to the recent increase in timber-related employment in the rural communities of Grant and Harney counties, but may reduce employment in the short-term.

Alternative 2 – Proposed Action

Direct and Indirect Effects

Viability of Harvest

The TEA_ECON program was run for harvest viability. The results of each program run, and the effects of alternative 2 on harvest viability, are shown in Table 3.

As shown in Table 3, alternative 2 would produce approximately $1,767,271 in revenue, cost $1,842,590, and produce an estimated present net value of $-75,319. This indicates that alternative 2 would produce a viable harvest for the purchaser but present net value to the government could have a negative return. These numbers are all based on the predicated high bid of $28.23 per ccf.

Employment and Income

In general, the primary effect on timber harvest-related employment would occur from commercial harvesting associated with alternative 2 over the next 2 years. Financially viable sales would be necessary to provide opportunities for timber harvest-related employment.

Non-commercial activities would also provide jobs through contracting; this is not estimated in the employment estimates in Table 3.

The distribution of economic impacts would depend on the location of the timber purchaser who was awarded the contracts at the time of the sale, the availability of equipment and skills in the economic impact zone, and the location and availability of wood processing facilities and related infrastructure. Processors outside of northeastern Oregon could potentially bid on the sales and distribute the jobs and income beyond the region.

As Table 3 shows, alternative 2 would generate $7,193,892 in direct, indirect, and induced local income.

Based upon the commercial volume harvested, alternative 2 would support approximately 258 jobs, (both direct and indirect) over the 2-year period.

Economic Efficiency

Market benefits that could occur as a result of the proposed activities include increases in forest productivity and value for the remaining trees by eliminating competitive stress and reducing the risk of growth-limiting insect attack.

Externalized costs such as those resulting from damage to soils, losses in wildlife habitat, and mobilized sediment in local streams are not well defined or measurable at the project level in terms that provide comparison of assigned dollar values. Refer to discussion of environmental consequences in the Camp Lick Environmental Assessment (EA) for more detailed analysis of whether these external effects would occur. Other sections of the EA also discuss the non-economic benefits to human and environmental resources for a relative comparison between alternatives.

Table 3 shows alternative 2 would have a present net value of $-75,319. Alternative 2 would have a net value per acre of $-7.

This economic analysis assessed the proposed action in terms of harvest viability, local employment and income, and economic efficiency as measured by cost effectiveness. Table 3 summarizes the results of the analysis.

Table 3. Economic analysis of alternative 2

Measure	Alternative 2
Timber volume (ccf)	67,704*
Ground based harvest acres	8,747
Skyline harvest acres	1,669
Total acres	10,416
Average bid price ($/ccf)	28.23
Discounted revenues ($)	1,767,271
Discounted cost ($)	1,842,590
Present net value ($)	-75,319
Present net value/acre ($)	-7
FS prep and administration costs ($/ccf)	24.27
Stump to truck costs ($/ccf)	83.42
Log haul costs ($)	30.61
Brush disposal costs ($)	203,112
Road maintenance/Erosion control costs ($)	67,704
Temporary roads (miles)	9
Direct jobs	161
Indirect jobs	97
Total jobs	258
Direct income ($)	4,495,112
Indirect and induced income ($)	2,698,781
Total income ($)	7,193,892

*Volume may decrease based on utilization of project design criteria.

**It is estimated that approximately 20 percent of the total volume is green convertible biomass (ponderosa pine 7 to 10.9 inches diameter at breast height).

Cumulative Effects

Viability of Harvest

Estimates for tentative advertised sawtimber bid rates for alternative 2 are within the range of rates experienced by the three Blue Mountain forests (Malheur, Umatilla, and Wallowa-Whitman) within the last two years. There are also residual effects from past timber sales within the subwatershed which would not have a detrimental effect on the viability of harvest of alternative 2. These past actions are described in detail in the Camp Lick FEA Appendix E – Past, Ongoing, and Reasonably Foreseeable Actions.

Employment and Income

Alternative 2 would provide some potential short-term economic relief by utilizing commercially thinned sawlogs. This material would potentially be used to support the sawmill operating in John Day. The amount of local economic activity would be determined by whether the purchaser is local or distant, which mill(s) local or distant get the lumber, and the price for the lumber. These

cumulative economic effects could cause beneficial "quality of life" social effects, especially when combined with other ongoing Forest Service timber sales within Grant and Harney counties that are providing employment and income.

There are foreseeable projects in the two counties in various stages of planning that may potentially add to the Forest's annual timber offerings for 2017 and beyond. For example, the Magone and Ragged Ruby projects on the Blue Mountain Ranger District, Summit Project on the Prairie City Ranger District, and the Dove and Flat projects on the Emigrant Creek Ranger District. These ongoing and foreseeable projects are expected to add cumulatively to the employment and income of Grant and Harney counties during the life of the Camp Lick Project.

Economic Efficiency

The economic efficiency of past, ongoing, or foreseeable future activities would not affect, or be affected by any effects that have not already been described.

Compliance with Forest Plan and Other Relevant Laws, Regulations, Policies and Plans

The proposed action is consistent with the following Malheur Forest Plan objectives and standards:

- Provide a sustained flow of timber for lumber, fiber, and/or associated wood products at a level that will contribute to economic stability, while providing for regional and national needs (USDA Forest Service 1990, Forest Goal 24, page IV-2).
- Provide and utilize wood fiber in the form of sawtimber, fiber, and/or associated wood products in a manner which will minimize losses and maximize outputs in a cost-effective manner, consistent with the various resource objectives and environmental standards (USDA Forest Service 1990, Forest Goal 25, page IV-2).
- Provide an economic return to the public (USDA Forest Service 1990, Forest Goal 26, page IV-2).
- Forest-wide Standard 103 (USDA Forest Service 1990, page IV-38): Timber harvest is prohibited on lands classified as unsuitable for timber management except when necessary to accomplish multiple-use objectives other than timber production. *All lands proposed for commercial timber harvest in alternative 2 are suitable for timber management*.

The no action alternative would not meet the Malheur Forest Plan goals and standards described above because this alternative would not produce any timber or associated wood products or provide an economic return to the public.

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